

(19) World Intellectual Property
Organization
International Bureau



03 MAY 2005

(43) International Publication Date
21 May 2004 (21.05.2004)

PCT

(10) International Publication Number
WO 2004/042775 A3

(51) International Patent Classification⁷: **H01J 49/48**

(21) International Application Number:
PCT/GB2003/004750

(22) International Filing Date:
4 November 2003 (04.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0225791.3 5 November 2002 (05.11.2002) GB

(71) Applicant (for all designated States except US): **KRATOS ANALYTICAL LIMITED** [GB/GB]; Wharfside, Trafford Wharf Road, Manchester, Greater Manchester M17 1GP (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **PAGE, Simon, Charles** [GB/GB]; 15 Warhurst Fold, Hadfield, Derbyshire

SK13 1AX (GB). **PARK, Colin, Duncan** [GB/GB]; 92 Boothway, Tottington, Bury, Greater Manchester BL8 3JT (GB). **HOPPER, Christopher, Michael** [GB/GB]; 15 Whitehaven Road, Bramhall, Stockport, Greater Manchester SK7 1EL (GB).

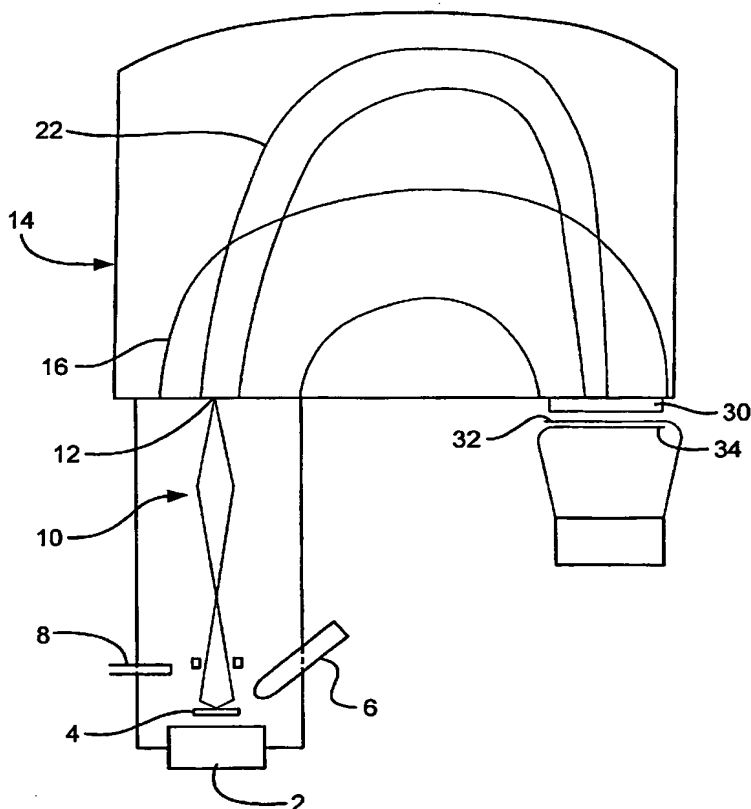
(74) Agents: **HACKNEY, Nigel, J. et al.**; Mewburn Ellis, York House, 23 Kingsway, London, Greater London WC2B 6HP (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: CHARGED PARTICLE SPECTROMETER AND DETECTOR THEREFOR



(57) Abstract: A charged particle (e.g. photoelectron) spectrometer is operable in a first mode to produce an energy spectrum relating to the composition of a sample being analysed, and in a second mode to produce a charged particle image of the surface of the sample being analysed. A detector is used to detect charged particles produced in both modes of operation. A method of operation of the spectrometer includes the step of selecting which of said first and second modes to use and the detector being operated accordingly.

WO 2004/042775 A3



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
12 August 2004

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

ional Application No

PCT/GB 03/04750

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01J49/48

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 170 778 A (PHYSICAL ELECTRONICS IND	1-3,
Y	INC) 9 January 2002 (2002-01-09)	14-16
A	column 11, last paragraph	4,17
Y	HATFIELD J V ET AL: "An integrated multichannel charged-particle sensing system" SENSORS AND ACTUATORS A, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 54, no. 1-3, 1 June 1996 (1996-06-01), pages 777-781, XP004077965 ISSN: 0924-4247 figure 4	5,18-26 4,17

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

9 June 2004

Date of mailing of the international search report

22/06/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Hulne, S

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 03/04750

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1170778	A	09-01-2002	US 5444242 A	22-08-1995
			EP 1170778 A2	09-01-2002
			DE 69526688 D1	20-06-2002
			DE 69526688 T2	29-08-2002
			EP 0669635 A2	30-08-1995
			JP 7325052 A	12-12-1995
<hr/>				